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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,866	09/29/2000	Ron Maurer	1000735-1	3319
22879	7590	01/25/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			WU, JINGGE	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/676,866	Applicant(s) MAURER, RON	
	Examiner Jingge Wu	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 5-13, 20-27 and 36 is/are allowed.
- 6) ☐ Claim(s) 1-4, 14-18, 28-34 and 39-41 is/are rejected.
- 7) ☐ Claim(s) 19, 35, 37, 38, 42, 43 and 44-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under Ex Parte Quayle, 1935 Comm'r Dec. 11 (1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on September 21, 2004 has been entered.

Applicants' response to the last Office Action, filed on September 21, 2004 has been entered and made of record.

Applicants' amendment has required new grounds of rejection. New grounds rejection are therefore presented in the Office Action.

Applicant's arguments have been fully considered but are moot in view of the new ground(s) of rejection. The Examiner would like to argue that the added limitation "only" is out of the scope of enablement supported by the specification. According to the specification, Examiner construes the claim language as not adding the word "only".

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In contrast to the added limitation "only" in the independent claims 1 and 16, the specification mentions that 1) "the chroma value is still independent

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upon the chromatic dynamic range (D).” (page 5 lines 27-28); and 2) all other cases of creating a new chroma value relate to the luminance value Y so it is not “only” according to chromatic dynamic range (D). Therefore, there is no support in the specification for the limitation.

Regarding to independent claims 15 and 29, the negative limitation “the chromatic dynamic ranges are not used to increase any chromatic values of the pixels in the digital image” also is not expressly mentioned in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 16-19, 28, 30-33, ~~22-24~~ are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for creating chroma value according to its chromatic dynamic range, does not reasonably provide enablement for “only” according to its dynamic range. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In contrary, the specification specifically mentions that “the chroma value is still independent upon the chromatic dynamic range (D):” (page 5 lines 27-28).

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-2, 16-17, and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by US 6031581 to Harrington (a reference of PTO 1449).

As to claim 1 (under Examiner's best understanding), Harrington discloses a method of reducing chromatic bleeding artifacts in a digital image, comprising:

reducing chrominance values of at least some pixels in the digital image(col. 5 line 23-28, col. 6 lines 48-59, see (3) if one chrominance value of pixel in the neighborhood is the maximum chrominance in the neighborhood, then the chrominance value will be reduced to $C_z(i, j) = \text{Max}(C_{\min}(i, j), C_o(i, j))$, the chrominance value $C_z(i, j)$ of the pixel $p(i, j)$ according to its chromatic dynamic range (col. 5 lines 15-30, col. 6 lines 48-59, col. 8 lines 28-33 note that C_{\min} and C_{\max} represent the chromatic dynamic range).

As to claim 2, Harrington further discloses the chromatic dynamic range can be presented as function of minimum and maximum values of local neighborhood (col. 5 lines 5-30, col. 8 lines 28-34).

As to claims 16-17, and 29, the claims are the corresponding apparatus and article of manufacture claims to claims 1-2, respectively. The discussion are addressed with regard to claims 1-2.

As to claims 30, 32 and 34, Harrington further discloses using a luminance value $d(i, j)/A(i, j)$ of a pixel being modified to determine an amount of chrominance reduction (col. 3 line 61-col. 4 line 47, col. 5 lines 5-14, col. 7 lines 1-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 14-15, 28, 31, 33, 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington.

As to claims 4, 31, 33, Harrington does not mention modifying pixel's chromatic value no more than a chrominance modulus (C0) derived from the neighborhood and does not modify the pixel if the pixel has a small dynamic range

Examiner takes Official Notice that those features are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of modifying pixel's chrominance value between zero and minimum of chrominance of the neighborhood pixels and leaving the pixel unchanged if the pixel has small dynamic range in the method of Harrington in order to reduce the color bleeding.

As to claims 14 and 28, Harrington does not mention reconstruction image and the chromatic dynamic range is determined from subsampled chrominance values.

Examiner takes Official Notice that those features are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of subsampling and reconstructing the image in the method of Harrington in order to reduce the computation load of the method.

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As to claim 15, Harrington discloses the chrominance value of C_z will be not increased (col. 5 line 23-28, col. 6 lines 48-59, see (3) if one chrominance value of pixel in the neighborhood is the maximum chrominance in the neighborhood, then the chrominance value will be reduced to $C_z(i, j) = \text{Max}(C_{\min}(i, j), C_0(i, j))$, the chrominance value $C_z(i, j)$ of the pixel $p(i, j)$ according to its chromatic dynamic range (col. 5 lines 15-30, col. 6 lines 48-59, col. 8 lines 28-33 note that C_{\min} and C_{\max} represent the chromatic dynamic range) except interpolating the chrominance channels.

Examiner takes Official Notice that interpolation of a chrominance channel is notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of interpolation in the method of Harrington in order to reduce the computation load of the method.

As to claims 39-41, Harrington does not mention C_0 in three states as claimed in claims 39-41.

Examiner takes Official Notice that those features are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the different C_0 s that are limiting the changes of chrominance value of pixels in the method of Harrington in order to reduce the effects of color bleeding, which the pixels are in different saturations.

Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington in view of US 5638138 to Hickman and US 5373327 to McGee et al.

As to claims 3 and 18, Harrington does not mention scaling the chromatic value via the ratio of C'/C .

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Hickman, in an analogous environment, discloses scaling the chromatic value of the chrominance components Cr and Cb according to the ratio of luminance (col. 5 lines 30-35).

McGee, , in an analogous environment, further discloses the ratio is the chromatic value to keep the hue unchanged (col. 4 lines 9-35 note that X^* (Cr-512) can be changed to a form $Cr'/C=1/X$).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the schemes of Hickman and McGee in the method of Harrington in order to maintain high quality of the image by keeping the hue of the image unchanged after color correction (Harrington, col. 1).

Allowable Subject Matter

Claims 19, 35, 37, 38, 42, 43, 44-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and overcome the 112 rejection of independent claims.

Claims 5-13, 20-27, and 36 are allowed

Contact Information

Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be

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reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9306.

Jingge Wu

Primary Patent Examiner

